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Yatin Acharya

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MANELLI DENISON & SELTER  
2000 M STREET NW SUITE 700  
WASHINGTON, DC 20036-3307

EXAMINER

WILSON, ROBERT W

ART UNIT

PAPER NUMBER

2419

MAIL DATE

DELIVERY MODE

10/15/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |                                       |  |
|------------------------------|--------------------------------------|---------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>09/905,067 | <b>Applicant(s)</b><br>ACHARYA, YATIN |  |
|                              | <b>Examiner</b><br>ROBERT W. WILSON  | <b>Art Unit</b><br>2419               |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/7/08</u> .  | 6) <input type="checkbox"/> Other: _____                          |

Art Unit: 2619

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2, 7-8, 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable in view of Benayoun (U.S. Patent No.: 6,499,061) in view of Fan (U.S. Patent No.: 6,643,269)

Referring to claim 1, Benayoun teaches: a method (Method performed per Fig 1) comprising:

Selecting by a network manager a tag as a prescribed number of bits of an address field of a network to be used for switching data packets traversing the network each data packet having header with content (Upon receipt of a switching node 12 per Figure 1 an internal function of the switching node or network manager performs classification on the packet and adds a label or tag. The label or tag is an address field used for switching therefore the tag inherently comprises a prescribed number of bits per col. 2 line 65 to col. 3 line 58. The header which is not shown in Figure 1 but described per col. 3 lines 10-15 has a source address and destination address or content which is used for switching the data packet traversing the network)

Configuring by the network manager each network switch of the network to switch each of the data packets based on a corresponding switching tag, added to the start of a corresponding data packet and the switching tag having the selected tag size of the address field without altering the content of the header (The switching node 12 per Fig 1 has an internal function or network manager which performs the function of adding a label or tag which is shown in Figure 1 or configuring. The label or tag is added in front of the packet or start of the corresponding packet per Fig 1. It should be noted that the packet shown in Figure 1 has a header which is not shown in Fig 1 but described per col. 3 lines 10 to 15. The label or tag shown in figure 1 is added in front of the packet therefore the content of the header is not altered).

Benayoun does not expressly call for: detecting nodes on a network by a network manager and selecting a size of address fields to be used for switching data packets traversing the network based on a number of the detected network nodes

Fan teaches: detecting nodes on a network by a network manager (general topology discovery for a virtual network per col. 4 line 44 to col. 6 line 67) selecting a size of address fields to be used

Art Unit: 2619

for switching data packets traversing the network based on a number of the detected network nodes (The size of an address can be varied based upon the number of nodes in the network per col. 5 lines 15 to col. 6 line 67

It would have been obvious to one of ordinary skill in the art at the time of the invention to adding detecting nodes on a network by a network manager and varying the size of the address of Fan to the size of tag of Benanyoun in order to build a system which utilizes tags based upon the number of nodes in the network which will result in a faster switching time.

In addition Benayoun teaches:

Regarding claim 2, wherein the configuring step includes sending a management datagram to each network switch the management data gram specifying that the switching is to based on the switching tag and the selected size of the switching tag (The first switch sends the packet with the default label which the examiner interprets as a datagram per col. 2 line 66 to col. 3 line 67)

Referring to claim 7, Benayoun teaches: a network manager (Classifying switching node per col. 2 line 66 to col. 3 line 67) comprising:

A controller configured for selecting a tag size as a prescribed number of bits of address field of a network to be used for switching data packets traversing a network each data packet having a header with content (Upon receipt of a switching node 12 per Figure 1 the node or controller performs classification on the packet and adds a label or tag. The label or tag is an address field used for switching therefore the tag inherently comprises a prescribed number of bits per col. 2 line 65 to col. 3 line 58. The header which is not shown in Figure 1 but described per col. 3 lines 10-15 has a source address and destination address or content which is used for switching the data packet traversing the network)

The controller configuring each network switch of the network to switch each of the data packet based on a corresponding switching tag (The controller function is distributed throughout all of the switches. When a particular flow is identified by a first switch a default label new label are assigned or configuring the data packet with a tag per col. 1 lines 30 to 46. The label or tag is added in front of the packet or start of the corresponding packet per Fig 1. It should be noted that the packet shown in Figure 1 has a header which is not shown in Fig 1 but described per col. 3 lines 10 to 15. The label or tag shown in figure 1 is added in front of the packet therefore the content of the header is not altered).

Benayoun does not expressly call for: An explorer resource configured for detecting network nodes on the network and selecting a size of address fields to be used for switching data packets traversing the network based on a number of the detected network nodes

Fan teaches: An explorer resource configured for detecting network nodes on the network (general topology discovery for a virtual network per col. 4 line 44 to col. 6 line 67) selecting a size of address fields to be used for switching data packets traversing the network based on a

Art Unit: 2619

number of the detected network nodes (The size of an address can be varied based upon the number of nodes in the network per col. 5 lines 15 to col. 6 line 67)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add an explorer resource configured for detecting network nodes on the network and varying the size of the address of Fan to the size of tag of Benayoun in order to build a system which utilizes tags based upon the number of nodes in the network which will result in a faster switching time.

In addition Benayoun teaches:

Regarding claim 8, wherein the configuring step includes sending a management datagram to each network switch the management data gram specifying that the switching is to be based on the switching tag and the selected size of the switching tag (The first switch sends the packet with the default label which the examiner interprets as a datagram per col. 2 line 66 to col. 3 line 67)

Referring to claim 10, Benayoun teaches: a network within a server system comprising a plurality of nodes (Fig 1)

A plurality of network switches configured for switching data packets (Figure 1 shows nodes 12 and 14 or plurality of switches configured for switching data packets and per col. 2 line 66 to col. 3 line 67)

The network manager configured for selecting a tag size as a prescribed number of bits of address field of a network to be used for switching the data packets, each data packet having a header with content (Upon receipt of a switching node 12 per Figure 1 an internal function of the switching node or network manager performs classification on the packet and adds a label or tag. The label or tag is an address field used for switching therefore the tag inherently comprises a prescribed number of bits per col. 2 line 65 to col. 3 line 58. The header which is not shown in Figure 1 but described per col. 3 lines 10-15 has a source address and destination address or content which is used for switching the data packet)

The network manager configured for configuring the network switches to switch each of the data packet based on a corresponding switching tag added to a start of the corresponding data packet (The network manager function is distributed throughout all of the switches. When a particular flow is identified by a first switch a default label new label are assigned or configuring the data packet with a tag per col. 1 lines 30 to 46. The label or tag is added in front of the packet or start of the corresponding packet per Fig 1. It should be noted that the packet shown in Figure 1 has a header which is not shown in Fig 1 but described per col. 3 lines 10 to 15. The label or tag shown in figure 1 is added in front of the packet therefore the content of the header is not altered).

And the switching tag having the selected tag size of the address field (The label or switching tag is an address field which inherently has a selected tag size which is used for switching per col. 2 line 65 to col. 3 line 58.) each network switch switching a received data packet based on

Art Unit: 2619

the corresponding switching (Each of nodes 12 and 14 per Fig 1 switch the packets based upon the tag or label without changing packet content; therefore, because the header or the packet is within the space of packet shown in Fig 1 the header is also not altered.)

Benayoun does not expressly call for: detecting nodes on a network by a network manager and selecting a size of address fields to be used for switching data packets traversing the network based on a number of the detected network nodes

Fan teaches: detecting nodes on a network by a network manager (general topology discovery for a virtual network per col. 4 line 44 to col. 6 line 67) selecting a size of address fields to be used for switching data packets traversing the network based on a number of the detected network nodes (The size of an address can be varied based upon the number of nodes in the network per col. 5 lines 15 to col. 6 line 67)

It would have been obvious to one of ordinary skill in the art at the time of the invention to adding detecting nodes on a network by a network manager and varying the size of the address of Fan to the size of tag of Benanyoun in order to build a system which utilizes tags based upon the number of nodes in the network which will result in a faster switching time.

Referring to claim 11, the combination of Benayoun and Fan teach: the network of claim 11.

Benayoun does not expressly call for: wherein the size corresponds to a selected number of bits

Fan teaches: wherein the size corresponds to a selected number of bits (A shortened address which corresponds to a selected number of bits per col. 3 line 6 or col. 4 line 7)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add wherein the size corresponds to a selected number of bits of Fan to the network of the combination of Fan and Benayoun in order to build a system which utilizes tags based upon the number of nodes which will result in a faster switching time.

Referring to claim 12, the combination of Benayoun and Fan teach: the network of claim 11.

Benayoun does not expressly call for: wherein each network switch is configured for generating address table entries based on the selected size

Fan teaches: wherein each network switch is configured for generating address table entries based on the selected size (look up table per col., 7 line 11-67 or col. 8 line 55-col. 10 line 67)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add wherein each network switch is configured for generating address table entries based on the selected size of Fan to the network of the combination of Fan and Benayoun in order to build a

Art Unit: 2619

system which utilizes tags based upon the number of nodes which will result in a faster switching time.

3. Claims 3-6, 9, 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Benayoun (U.S. Patent No.: 6,499,061) in view of Fan (U.S. Patent No.: 6,643,269) further in view of Chui (U.S. Patent Pub No.: US2002/0165978)

Referring to claim 3, the combination of Benayoun and Fan teaches: the method of claim 1 and wherein detecting step and configuring step include access the network according to a network protocol (label is added to packet which is based upon a protocol per Fig 1)

Benayoun does not expressly call for: Infiniband network protocol

Chui teaches: Infiniband network protocol (packets per Pg 6 Para [0195])

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the Infiniband packet (Infiniband Network Protocol) of Chui in place of the packet of the combination of Benayoun and Fan because Infiniband packet is another type of packet in which label switching could be utilized in order to more quickly switch the packets between switches without looking up a destination address.

In addition Benayoun teaches:

Regarding to claim 4, the combination of Fan, Benayoun, and Chui teach: the method of claim 3 and Infiniband packet with label based upon size Benayoun teaches: receiving by a first of the network switches a packet having a destination local identifier specifying a destination node on the network (12 per Fig 1 receives a packet with a destination address for a node which per col. 3 lines 6-12)

Adding by the first network switch a new switching tag on the start of the packet having a selected size and specifying the destination node based on the DLID and switching the packet having the new switching tag to a second of the network switches based on the switching tag having a new switching tag to a second network switch (12 per Fig 1 or first network switch adds new a label or flow identifier based upon a destination address and switches the packet with the new switching tag to 14 or second switch based on the new switching tag per col. 3 line 15 to 22)

Regarding claim 5, the combination of Fan, Benyoun, and Chui teach: the method of claim 4 and Infiniband packet & Benayoun teaches: receiving the new switching tab by the second network switch selectively removing by the second network switch the new switching tag from the packet based on whether the new switching tag specifies a destination node reachable by the second network switch and selectively output the packet following removal of the new switching tag to the destination based on the destination node being reachable by the second network

Art Unit: 2619

switch (14 per Fig 1 (second network switch) receives the packet with the label and removing the new switching tag from the packet based on whether the new switching tag specifies a destination anode is reachable by the corresponding node (14 per Fig 1 (second network switch) receives the packet with the label and removes the label or tag and adds another label or tag based upon whether the destination address of the packet is reachable by 12 per Fig 1 and per col. 3 lines 6 to 67)

Regarding claim 6, the combination of Benayoun, Fan, and Chui teach: the method of claim 5 and Infiniband packet Benayoun teaches: further comprising selectively outputting by the second network switch the packet including the new switching tag to a third of the network switches based on a determined unreachability of the destination node by the second network switch (14 per Fig 1 (second network switch) receives the packet with the label and removes the label or tag and adds another label or tag based upon whether the destination address of the packet is reachable by 12 per Fig 1 and per col. 3 lines 6 to 67)

Referring to claim 9, the combination of Benayoun and Fan teach: the network manager of claim 7 as well as a network packet protocol and Fan teaches wherein the explore resource and controller or for access the network according to a network protocol (col. 10 lines 41 to 52 and col. 2 lines 8 to 24)

The combination of Fan and Benayoun do not expressly call for: Infiniband Network protocol.

Chui teaches: Infiniband Network Protocol (Infiniband packets which utilize Infiniband Network protocol. per Pg 6 Para [0195])

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the Infiniband packets or protocol of Chui in place of the packet of Fan and Benayoun because Infiniband packet is another type of packet in which label switching could be utilized in order to more quickly switch the packets between switches without looking up a destination address

Referring to claim 13, the combination of Benayoun & Fan teaches: the method of 11 and wherein detecting step and configuring step include access the network according to a network protocol (label is added to packet which is based upon a protocol per Fig 1)

The combination of Benayoun and Fan do not expressly call for: Infiniband Network Protocol

Chui teaches: Infiniband Network Protocol (Infiniband packets which utilize Infiniband Network protocol. per Pg 6 Para [0195])

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the infiniband packet of Chui in place of the packet of the combination of Fan and Benayoun because Infiniband packet is another type of packet in which label switching could be utilized in



Art Unit: 2619

order to more quickly switch the packets between switches without looking up a destination address.

In addition Benayoun teaches:

Regarding to claim 14, the combination of Fan, Benayoun, and Chui teach: the network of claim 11 and Infiniband packet with label based upon size Benayoun teaches: receiving by a first of the network switches a packet having a destination local identifier specifying a destination node on the network (12 per Fig 1 receives a packet with a destination address for a node which per col. 3 lines 6-12)

Adding by the first network switch a new switching tag on the start of the packet having a selected size and specifying the destination node based on the DLID and switching the packet having the new switching tag to a second of the network switches based on the switching tag having a new switching tag to a second network switch (12 per Fig 1 or first network switch adds new a label or flow identifier based upon a destination address and switches the packet with the new switching tag to 14 or second switch based on the new switching tag per col. 3 line 15 to 22)

Regarding claim 15, the combination of Fan, Benyoun, and Chui teach: the network of claim 14 and Infiniband packet & Benayoun teaches: receiving the new switching tab by the second network switch selectively removing by the second network switch the new switching tag from the packet based on whether the new switching tag specifies a destination node reachable by the second network switch and selectively output the packet following removal of the new switching tag to the destination based on the destination node being reachable by the second network switch (14 per Fig 1 (second network switch) receives the packet with the label and removing the new switching tag from the packet based on whether the new switching tag specifies a destination anode is reachable by the corresponding node (14 per Fig 1 (second network switch) receives the packet with the label and removes the label or tag and adds another label or tag based upon whether the destination address of the packet is reachable by 12 per Fig 1 and per col. 3 lines 6 to 67)

### ***Response to Amendment***

4. Applicant's arguments filed 7/7/08 have been fully considered but they are not persuasive.

The examiner respectfully disagrees with the applicant argument that the combination of referenced do not teach: selecting by a network manager a tag size, as a prescribed number of bits of an address field of a network to be used for switching data packets traversing the network based on the number of the detected network nodes.

Benayoun teaches: Selecting by a network manager a tag as a prescribed number of bits of an address field of a network to be used for switching data packets traversing the network each data

Art Unit: 2619

packet having header with content (Upon receipt of a switching node 12 per Figure 1 an internal function of the switching node or network manager performs classification on the packet and adds a label or tag. The label or tag is an address field used for switching therefore the tag inherently comprises a prescribed number of bits per col. 2 line 65 to col. 3 line 58. The header which is not shown in Figure 1 but described per col. 3 lines 10-15 has a source address and destination address or content which is used for switching the data packet traversing the network)

Benayoun does not expressly call for: detecting nodes on a network by a network manager and selecting a size of address fields to be used for switching data packets traversing the network based on a number of the detected network nodes

Fan teaches: detecting nodes on a network by a network manager (general topology discovery for a virtual network per col. 4 line 44 to col. 6 line 67) selecting a size of address fields to be used for switching data packets traversing the network based on a number of the detected network nodes (The size of an address can be varied based upon the number of nodes in the network per col. 5 lines 15 to col. 6 line 67)

It would have been obvious to one of ordinary skill in the art at the time of the invention to adding detecting nodes on a network by a network manager and varying the size of the address of Fan to the size of tag of Benanyoun in order to build a system which utilizes tags based upon the number of nodes in the network which will result in a faster switching time.

The examiner disagrees with the applicant's argument that FAN does not teach: varying the size of a field in based upon number of the detected network nodes

Fan clearly teaches: varying the size of a field in based upon number of the detected network nodes (8 bits are required to address 256 devices per col. 5 line 58 to 67)

The examiner respectfully disagrees with the applicant's argument that if Fan and Benayoun were combined in the manner suggested by the examiner that the routing header would have to be replaced with a single byte short address as taught by Fan. The examiner points out that applicant has made this suggestion not the examiner.

The examiner respectfully disagrees with the applicant's argument that Fan teaches away from what is claimed because Fan teaches: literally replacing a long address with a short address because a header is altered. Applicant's logic is flawed because applicant has created their own rejection based upon the literally incorporation of details of the two references and stated that the examiner is the examiner rejection. No where in either of the two references is there a teaching away from selecting by a network manager a tag size, as a prescribed number of bits of an address field of a network to be used for switching data packets traversing the network based on the number of the detected network nodes. The applicant has created supposed errors in applicant's rejection and not the rejection provided by the examiner.

Art Unit: 2619

The examiner respectfully disagrees with the applicant's argument that the combination of Benanyoun and Fan do not teach: "selecting a tag without altering the content of a header with a tag size" and "prescribed number of bits of an address field of a network"

Benanyoun teaches: selecting a tag without altering the content of a header with a tag size (The classifying switch or management node classifies the packet based upon information in the header and adds a tag which is a fixed value as shown in Figure 1 without altering the packet. It should be noted that the packet shown in Figure 1 contains both header and payload so adding the label has no affect on the header)

Fan teaches: prescribed number of bits of an address field of a network (The size of an address can be varied based upon the number of nodes in the network per col. 5 lines 15 to col. 6 line 67)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add varying the size of the address of Fan to the size of tag of Benanyoun in order to build a system which utilizes tags based upon the number of nodes in the network which will result in a faster switching time.

The examiner disagrees with the applicant's argument the combination of references teach away from adding a tag at the start of the packet without altering the content. Benayoun teaches adding a tag at the start of a packet without altering the content per Fig 1 and per col. 2 line 66 to col. 3 line 67. Fan: varying the size of a field in based upon number of the detected network nodes (col. 4 line 44 to col. 6 line 67)

### ***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT W. WILSON whose telephone number is (571)272-3075. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571/272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2619

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Robert W Wilson/  
Primary Examiner, Art Unit 2419

RWW